the adult. Also, vitamin D regulates the level of these minerals in the blood by diverting them to the skeleton where they are deposited (Grollman, p. 286). Since the cement depositing cells of the tooth sac are active at this time, it is reasonable to conclude that they, like the osteoblasts, would respond to the stimulus of vitamin D to help maintain the level and ratio of these minerals in the body fluids. Consequently, it would appear that *the deposition of a large amount of cement on the teeth of the Florida Miocene horses was the result of a high mineral intake and a temporary endocrine imbalance brought on by the maturation of the gonads.* Also, the amount of cement deposited would be a function of the degree of endocrine imbalance.

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## ZOOLOGY.—*Marine Ostracoda from Tortugas, Florida.*[1]

Willis L. Tressler, University of Maryland. (Communicated by Waldo L. Schmitt.)

The marine ostracods of the eastern North American coast are still imperfectly known. Brady and Norman (1889) reported on ostracods of the North Atlantic, and a few years before this, Dr. Brady (1870) described a few from the Gulf of St. Lawrence. Cushman (1906) reported on 26 species from Vineyard Sound and Woods Hole. Blake (1929, 1933) added considerably to our knowledge of American marine Ostracoda in his report on the ostracods of the Mount Desert region. Tressler (1940) listed eight species from the sand beaches at Beaufort, N. C., and Tressler and Smith (1948) made an ecological study of the ostracods of the Solomons Island, Md., region.

The present paper deals with 13 species of marine ostracods, 7 of which are believed to be new, from the Dry Tortugas, Fla. The material was largely obtained by Dr. Waldo L. Schmitt, U. S. National Museum, from debris secured in the course of otter trawl hauls and from the cracking up of corals and rocks, seaweed washings, and rock scrapings. Only two species were otherwise collected; these were from the alimentary tracts of fish dissected by Dr. Harold W. Manter, of the University of Nebraska. The distribution of the species in the Tortugas area is shown in Table 1.

The slides of the dissected and figured specimens, together with the alcoholic material, have been deposited in the U. S. National Museum as type specimens.

### Suborder Myodocopa

### Family CYPRIDINIDAE

#### Subfamily Cypridininae

#### Genus **Cypridina** Milne-Edwards

Valves moderately tumid of more or less oval shape with smooth surface. Frontal incisure deep and occurring nearly in the middle of the anterior border. Eye well developed in both sexes, but larger in the male. Frontal tentacle short, clavate. Anterior antenna 7-articulate and similar in both sexes. In most cases the posterior antenna has an endopodite that is not transformed in the male. Furca with at most 12 claws.

#### **Cypridina squamosa** G. W. Müller

Fig. 21

*Cypridina squamosa* G. W. Müller, F. Fl. Neapel **21**: 207. 1894.

*Specific characters.*—Female: Shell rather short, height about two-thirds the length and higher in the posterior half. Dorsal margin of valve strongly rounded, ventral border less so.

[1] A contribution from the Zoology Department, University of Maryland, College Park, and the Chesapeake Biological Laboratory, Solomons, Md. Received May 5, 1949.

Posterior end broadly rounded, lower portion with a noticeable flange. Surface of shell covered with shallow pits. Furca with seven claws. Length reaching 3.3 mm. in the female and 2.6 mm. in the male. Length of Tortugas female specimen 1.71 mm.; height 1.06 mm.

*Occurrence.*—Two females from haul of 30-foot otter trawl in 10–11 fathoms along the east side of White Shoal, August 9, 1930 (stations 49–30); one female from debris of broken-up *Porites* clump brought up by aid of diving hood, west side of Loggerhead Key, July 26, 1930 (station 33-30) (depth not given; may have been 12–15 feet); one female from tow of 30-foot otter trawl in 10–11 fathoms in channel east and south of Loggerhead Key, August 8, 1930 (station 47-30); one female from the debris of cracked-up rock from west side of Loggerhead Key, June 26, 1931 (no station number).

*Distribution.*—Also known from the Gulf of Naples.

### Cypridina flatus, n. sp.

Figs. 15–16

*Specific characters.*—FEMALE: Valves rather flattened dorsoventrally, dorsal border almost straight, ventral border well rounded. Frontal incisure deep and narrow with a well-defined striated lamella below. Posterior border of the shell with a marked flange on the lower half. Surface of shell smooth and polished. Antennae and other appendages typical of the genus. Furca with nine claws. Length 2.44 mm.; height 1.50 mm.

MALE:—Unknown.

*Occurrence.*—One female believed to have been taken with 30-foot otter trawl from a depth of 580–600 fathoms about 40 miles south of No. 2 Red Channel Buoy, July 30, 1932 (? station 65-32), holotype (slide), U.S.N.M. no. 88845.

### Subfamily ASTEROPINAE

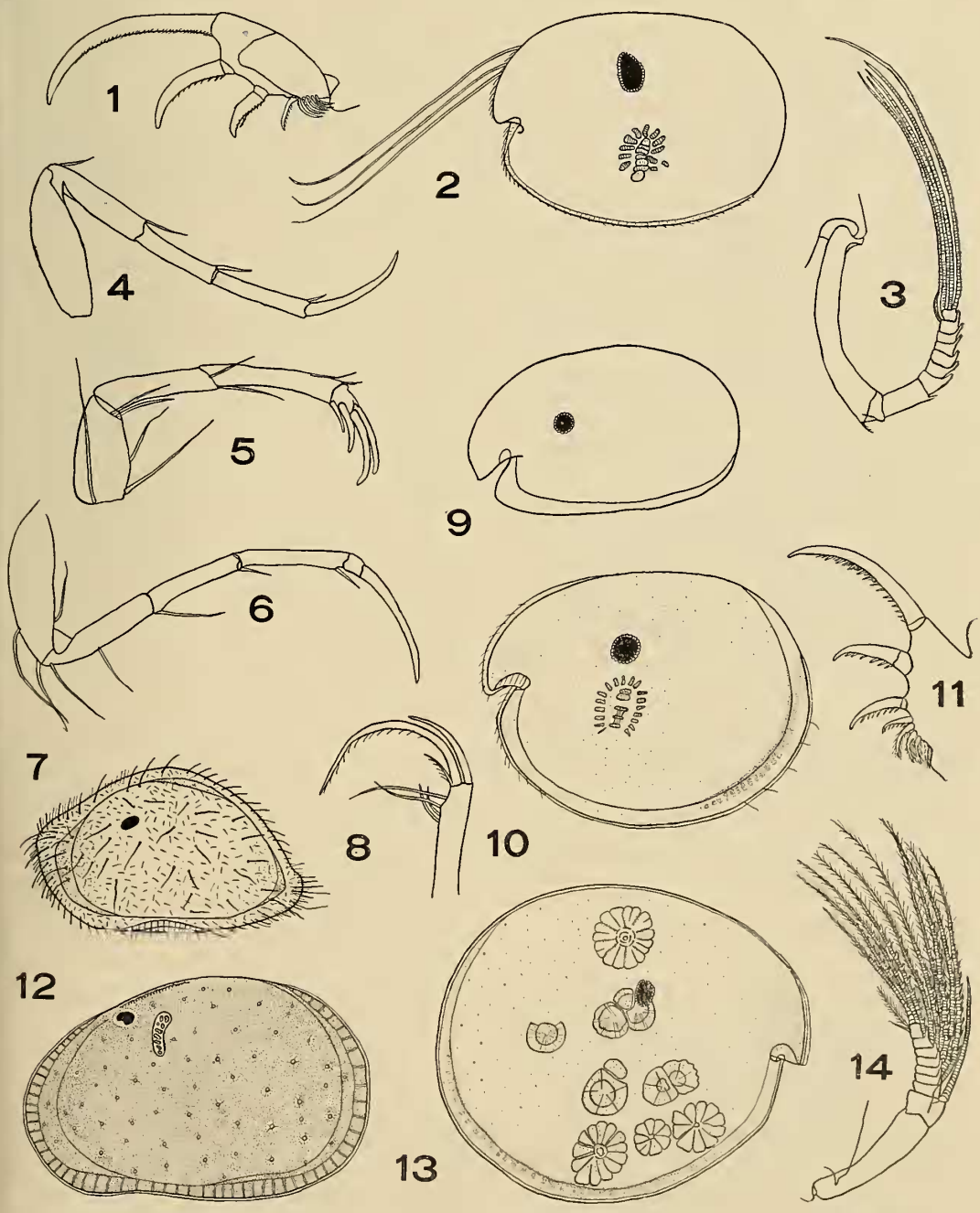
### Genus Asterope Philippi

Shell more or less oblong in shape, of firm consistency with prominent frontal incisure placed in the lower half of the anterior margin. Sexual dimorphism strongly marked in this genus. Eyes well developed in both sexes. Anterior antenna 6-articulated and similar to that of other members of the Cypridinidae. Furca with at

TABLE 1.—DISTRIBUTION OF SPECIES

| Station | Location | Date | Depth | Ostracods |
|---|---|---|---|---|
| 30-30 | West side Loggerhead Key | July 24, 1930 | 12–15 feet | *Asterope elliptica*<br>*Nesidea cushmani* |
| 31-30 | East side Loggerhead Key | July 24, 1930 | Rocks at low tide | *Cyclasterope tripla* |
| 33-30 | West side Loggerhead Key | July 26, 1930 | 12–15 feet (?) | *Cypridina squamosa*<br>*Nesidea cushmani*<br>*Asterope elliptica* |
| 35-30 | 13 miles south of No. 2 Red Buoy | July 29, 1930 | From stomach of fish, 80–100 fathoms | *Conchoecia atlantica* |
| 47-30 | Channel east and south of Loggerhead Key | August 8, 1930 | 10–11 fathoms | *Cypridina squamosa*<br>*Macrocypris africana*<br>*Pontocypris intermedia*<br>*Nesidea cushmani* |
| 48-30 | Lower channel east and south of Loggerhead Key | August 9, 1930 | 10–11 fathoms | *Nesidea cushmani* |
| 49-30 | West side of White Shoal | August 9, 1930 | 10–11 fathoms | *Cypridina squamosa*<br>*Cyclasterope sphaerica* |
| 12-31 | Southwest channel, north of No. 2 Red Buoy | June 26, 1931 | 9–10 fathoms | *Cyclasterope tripla* |
| 16-31 | South side of channel through Bird Key reef | June 30, 1931 | *Porites* clumps at low tide | *Asterope elliptica* |
| 65-32 | 40 miles south of No. 2 Red Buoy | July 30, 1932 | 580–600 fathoms | *Cypridina flatus* |
| Loggerhead | Key West side | June 26, 1931 | Cracked-up rock | *Cypridina squamosa*<br>*Asterope elliptica*<br>*Asterope mariae*<br>*Cyclasterope sphacrica*<br>*Macrocypris schmitti*<br>*Xestoleberis punctata* |
| Marker 754 | Off Loggerhead Key | June 25, 1931 | From stomach of fish, *Priacanthus cruentatus*, taken in gill net | *Cyclasterope priacanthus* |

least five claws. This genus is strikingly set off from all the other known ostracods by the presence of seven well-developed gills in the posterior part of the body.




Figs. 1–3.—*Cyclasterope priacanthus*, n. sp.: 1, Furca, female; 2, left valve, female; 3, first antenna, female. Figs. 4–8.—*Nesidea cushmani*, n. sp.: 4, Thoracic leg, female; 5, second antenna, female; 6, thoracic leg, female; 7, left valve, female; 8, furca, female. Fig. 9.—*Asterope elliptica* Philippi, left valve, female. Figs. 10, 11.—*Cyclasterope tripla*, n. sp.: 10, Left valve, female; 11, furca, female. Fig. 12.—*Xestoleberis punctata*, n. sp.: Left valve, female. Figs. 13, 14.—*Cyclasterope sphaerica*, n. sp.: 13, Right valve, female; 14, first antenna, female.

### Asterope mariae (Baird)

Fig. 22

*Cypridina mariae* W. Baird, Proc. Zool. Soc. London **18:** 257. 1850.
*Cylindoleberis mariae* G. S. Brady, Trans. Linn. Soc. London **26:** 465. 1868.
*Asterope oblonga* C. Claus, Crust. Syst.: 92. 1876.
*Cylindoleberis oblonga* G. W. Müller, F. Fl. Neapel **21:** 219. 1894.
*Asterope mariae* G. O. Sars, Crustacea of Norway **9:** Ostracoda: 17. 1928.

*Specific characters.*—Female: Shell very narrow and flattened dorsoventrally. Height barely half the length. Both dorsal and ventral shell margins only very slightly curved; both extremities rounded and about equal. Frontal incisure of valves rather deep and narrow, occurring well below the middle of the extremity. Surface of the shell smooth and polished, completely devoid of hairs. Eyes well developed. Last pair of legs provided with only 12 cleaning spines. Caudal furca with 10 claws, the proximal ones very small. Length of adult female reaching 2.20 mm. Length of Tortugas specimen 1.43 mm.; height 0.67 mm.

Male: Of very. different external appearance from female. Shell of irregular, oblong shape, being noticeably higher in the anterior portion than posteriorly. Valves thin and pellucid with a few hairs.

*Occurrence.*—Two immature females found in the debris of a cracked-up rock from the west side of Loggerhead Key, June 26, 1931 (no station number).

*Distribution.*—West coast of Sweden, British Isles, coast of France, Mediterranean, Norwegian coast, Vineyard Sound.

### Asterope elliptica Philippi

Fig. 9

*Asterope elliptica* A. Philippi, Arch. Naturg. **61:** 188. 1840.
*Asterope elliptica* G. O. Sars, Arch. Naturv. Kristian. **12:** 200. 1887.

*Specific characters.*—Female: Shape of shell similar to *A. mariae* but shorter with definitely rounded dorsal and ventral borders. Height of shell about half the length. The distal border of the fourth segment of the anterior antenna, which is fused with the third segment, is strongly bent, the ventral border being only half as long as the breadth of the segment. The claws at the end of the anterior antenna are longer than the dorsal border of the third to the sixth segments. The exopodite of the mandibular palp is longer than one-half the second segment of the palp. Furca similar to *A. mariae*. Length of female reaching 1.44 mm. Length of Tortugas female 1.09 mm.; height 0.68 mm.

Male: Shell not as high as that of the female and reaching about six-thirteenths of the body length. Anterior portion somewhat broader than in the female. Dorsal border of the shell abnormally rounded owing to a well-defined corner at the posterior border.

*Occurrence.*—Two females were obtained from rock fragments brought up with aid of diving hood west side of Loggerhead Key, in 12–15 feet of water, July 24, 1930 (station 30–30); one female from debris of broken up clump of *Porites* also brought up from the west side of Loggerhead Key with aid of diving hood, from probably the same depth as the preceding, July 26, 1930 (station 33-30); two females, also from the debris of broken up *Porites* clumps picked up at low tide on the south side of the channel through Bird Key reef, June 30, 1931 (station 16-31); one female from the debris of cracked-up rock from west side of Loggerhead Key, June 26, 1931 (no station number).

*Distribution.*—Mediterranean, North Atlantic Ocean.

## Genus Cyclasterope G. Brady

This genus is closely related to the genus *Asterope* and resembles it closely in many respects. However, it differs from *Asterope* in the arrangement of the claws of the furca. In the present genus there are three or four comparatively short claws followed by a greater number of decidedly smaller, bristlelike structures. Shell height is also much greater than in *Asterope* and many forms are almost spherical in shape.

### Cyclasterope priacanthus, n. sp.

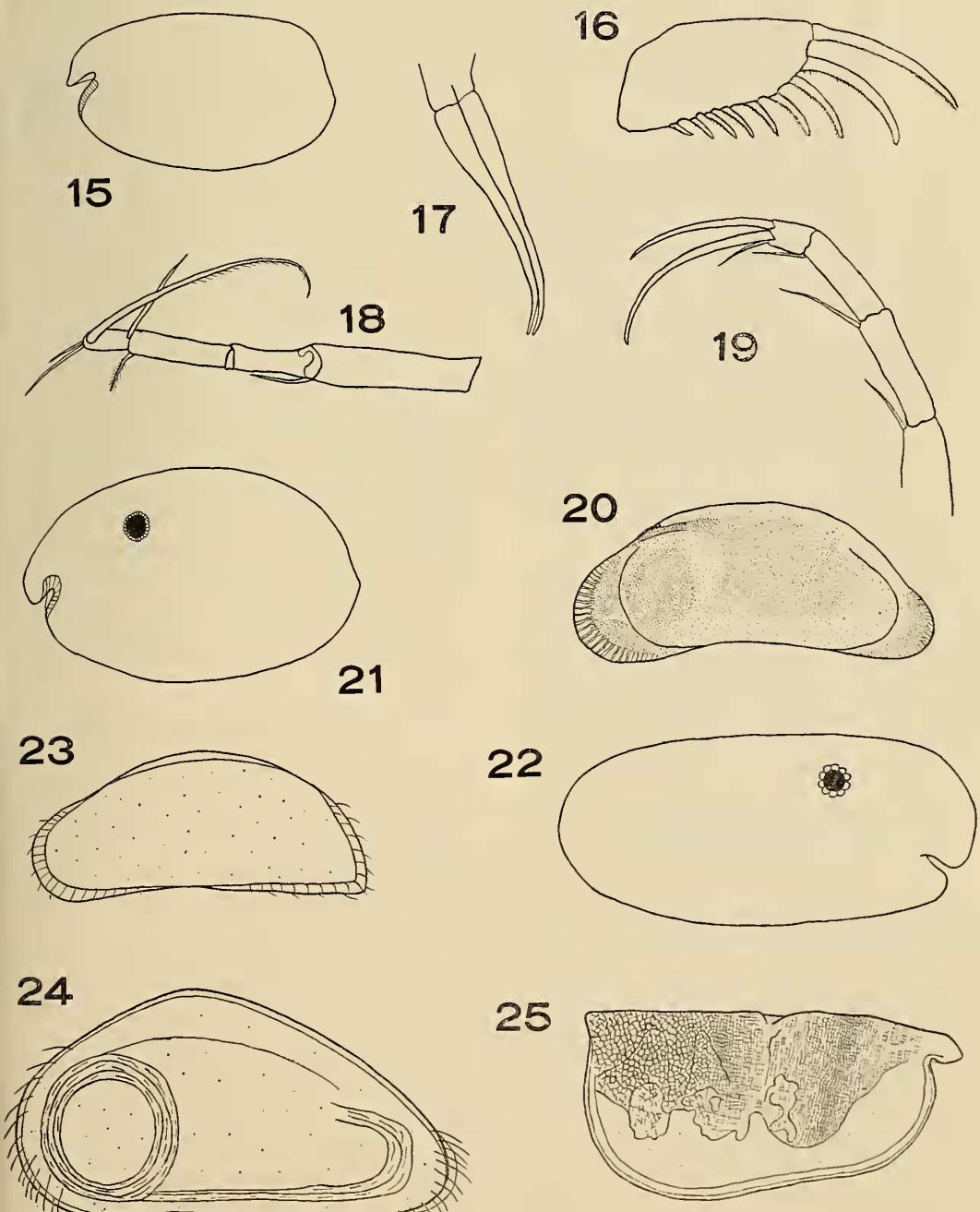
Figs. 1–3

*Specific characters.*—Female: Shell broadly oval in outline; height about eight-elevenths length. Ventral border well rounded; dorsal border less rounded with a trace of a corner at the posterior border. Both anterior and posterior extremities well rounded. Eye large and well developed. Muscle markings form a conspicuous rosette in lower center of the shell. On the fifth segment of the anterior antenna there is an

absence of teeth. Furca with four main claws and five smaller ones. Length 2.78 mm.; height 2.04 mm.

Male: Unknown.

*Remarks.*—The shape of the shell of this species is similar to that of *C. brevis* (G. W. Müller) but




Figs. 15, 16.—*Cypridina flatus*, n. sp.: 15, Left valve, female; 16, furca, female. Figs. 17–20.—*Macrocypris schmitti*, n. sp.: 17, Furca, female; 18, second leg, female; 19, first leg, female; 20, left valve, female. Fig. 21.—*Cypridina squamosa* G. W. Müller, left valve, female. Fig. 22.—*Asterope mariae* (Baird), right valve, female. Fig. 23.—*Maeroeypris africana* G. W. Müller, left valve, female. Fig. 24.—*Pontocypris intermedia* Brady, left valve, male. Fig. 25.—*Conchoecia atlantica* (Lubbock), right valve, female.

is not so high or so long as *brevis*. The shell of the present species also lacks the branched striations.

*Occurrence.*—One specimen was found in the stomach of *Priacanthus cruentatus*, which was taken in a gill net off Loggerhead Key, June 25, 1931 (no station number). Holotype (slide), U.S.N.M. no. 88848.

### Cyclasterope tripla, n. sp.

Figs. 10–11

*Specific characters.*—Female: Shell somewhat similar to that of *C. americana* (G. W. Müller) but with a decidedly flattened dorsal margin and a somewhat more prominent and deeper frontal incisure. Ventral border very much rounded and practically spherical in outline. Posterior extremity somewhat more broadly rounded than the anterior. Inner margin of the postero-ventral border with a series of short, parallel markings. Eye large and prominent. Muscle markings very prominent. Appendages typical of the genus. Furca with three large claws and five smaller ones. Length 1.96 mm.; height 1.65 mm.

Male: Unknown.

*Occurrence.*—Three females were obtained from seaweed taken at low tide from rocks below the lighthouse dock, east side of Loggerhead Key, July 24, 1930 (station 31-30); holotype (slide), U.S.N.M. no. 88842; one female from haul of 30-foot otter trawl in 9–10 fathoms in the southwest channel north of No. 2 Red Buoy, June 26, 1931 (station 12-31).

### Cyclasterope sphaerica, n. sp.

Figs. 13–14

*Specific characters.*—Female: Shape of shell almost spherical; height slightly greater than five-sixths the length. Dorsal and ventral borders both broadly rounded, the ventral being practically spherical in outline. Frontal incisure very small and shallow. Central portion of the shell covered with a series of rosettelike markings, possibly glands. Eye not so large as in the preceding species but well developed. There are no teeth on the fifth segment of the anterior antenna. The terminal flagellae of the anterior antennae are strongly toothed through the greater part of their length. Furca with three large, powerful claws, followed by seven small ones. Length 2.44 mm.; height 2.12 mm.

Male: Unknown.

*Remarks.*—In general appearance this species resembles *C. americana* (G. W. Müller), but the shell is higher and larger and no prominent markings are figured in Müller's drawing. Müller does not figure the eye, but this is probably an omission.

*Occurrence.*—One female from haul of 30-foot otter trawl in 10–11 fathoms along the east side of White Shoal, August 9, 1930 (station 49-30), holotype (slide), U.S.N.M. no. 88844; one female from the debris of cracked-up rock from west side of Loggerhead Key, June 26, 1931 (no station number).

## Family CONCHOECIDAE

### Subfamily Conchoecinae

### Genus Conchoecia Dana

This genus contains forms which are unmistakably set off from closely allied ostracods by the oblong shape of the body and the almost straight dorsal margin, which is prolonged anteriorly into a beaklike rostral projection. The surface of the shell is without hairs but is usually covered by delicate, curved striations which cross each other at intervals, forming a network. The genus has been found in almost every part of the oceans and comprises nearly one hundred species.

### Conchoecia atlantica (Lubbock)

Fig. 25

*Halocypris atlantica* J. Lubbock, Trans. Ent. Soc. London, n. s., **4**: 28. 1856.
*Conchoecia cuneata* G. W. Müller, Zool. Jahrb. (Abt. Syst.) **5**: 271. 1890.
*Conchoecia atlantica* G. W. Müller, Ergebn. Tiefsee-Exp. **8**: 92. 1906.

*Specific characters.*—Female: Shell very solidly built and small in proportion to the body so that the valves are always found gaping open. Shell is oblong in shape; height about one-half the length of the body. The depth of the shell is noticeably greater in the posterior half of the body than in the anterior. Dorsal border straight with a marginal indentation halfway toward the anterior extremity. Ventral border well rounded posteriorly and tapering toward the front. Posterior border straight and ending in a blunt spine at the postero-dorsal margin. Length 3.58 mm.; height 1.88 mm.

Male: Shell even more elongate than in the female. Not so much difference in depth of shell in posterior and anterior portions.

*Occurrence.*—One female was taken from the stomach of a fish caught with 30-foot otter trawl in 80–100 fathoms, about 13 miles south of no. 2 Red Buoy, July 29, 1930 (station 35-30).

*Distribution.*—Atlantic, Indian, and Pacific Oceans.

## Suborder Podocopa

### Family CYPRIDAE

#### Subfamily Pontocyprinae

#### Genus **Pontocypris** Sars

Shell of rather thin consistency, of triangular shape. Valves unarmed at the edges but are densely hairy. Eye well developed. Members of this genus are active swimmers as is shown by the well-developed natatory antennae. Posterior antenna has a 3-jointed endopodite. The second leg is equipped with a very heavy, terminal claw. In the male, in many species, the spermatic vessels are carried forward along the ventral side and terminate in a dense spiral coil.

**Pontocypris intermedia** G. Brady

Fig. 24

*Pontocypris intermedia* G. S. Brady, Ann. Mag. Nat. Hist., ser. 4, **2:** 220. 1868.
*Pontocypris intermedia* G. O. Sars, Arch. Naturv. Kristian. **12:** 267. 1887.
*Pontocypris intermedia* G. W. Müller, F. Fl. Neapel **21:** 254. 1894.

*Specific characters.*—Female: Shell definitely triangular in shape; height about three-eighths the length; highest one-third the distance from the anterior end. Dorsal border peake-shaped with a definite rounded corner at the highest point. Anterior end broadly rounded, posterior end produced by a sloping dorsal margin to an extremity of less than half the depth of the anterior margin. Ventral border nearly flat with only a slight indentation directly below the dorsal peak. Eye large and prominent. Both extremities covered with long, heavy hairs. Length 0.67 mm.; height 0.25 mm.

Male: Shell shape similar. The spermatic vessels are drawn along the ventral margin toward the anterior end where they terminate in a spiral coil. Length 0.64 mm.; height 0.27 mm.

*Occurrence.*—Five males from haul of 30-foot otter trawl in 10–11 fathoms in channel east and south of Loggerhead Key, August 8, 1930 (station 47-30).

*Distribution.*—Mediterranean.

#### Subfamily Macrocyprinae

#### Genus **Macrocypris** Brady

Shell elongate, tapering toward the posterior end. Consistency of shell very solid, containing much lime. Inner duplicatures of valves rather broad with a striated marginal zone. Dorsal border well rounded; ventral border almost straight. Eye lacking in this genus. First leg terminating with two large claws of unequal length. Second leg with a long backward-directed seta, extended almost to the base of the leg. Caudal furca small and very rudimentary.

**Macrocypris africana** G. W. Müller

Fig. 23

*Macrocypris africana* G. W. Müller, D. Südp. Exp. **10:** 97. 1908.

*Specific characters.*—Female: Shell elongate, height about two-fifths the length, highest point about the middle. Dorsal border strongly arched; ventral border almost straight with a slight curve inward toward the middle. Anterior end somewhat produced and well rounded. Posterior extremity ending in an acuminate corner at the ventroposterior angle. Surface of valves very smooth and polished. Anterior thoracic leg with the shortest claw longer than one half the length of the longer claw. Length 1.22 mm.; height 0.51 mm.

Male: Somewhat smaller than the female but in other respects little different. Furca straighter than in the female.

*Occurrence.*—Three females from haul of 30-foot otter trawl in 10–11 fathoms in channel east and south of Loggerhead Key, August 8, 1930 (station 47-30).

*Distribution.*—Originally described from the coast of South Africa.

**Macrocypris schmitti**, n. sp.

Figs. 17–20

*Specific characters.*—Female: Shell of a dark brown color and of firm consistency. Height about one-half the length. Dorsal margin strongly

arched; ventral margin exhibiting a marked concavity in the center and extending through three-fourths of the length. Anterior end somewhat produced and broadly rounded. Posterior end produced in a well-rounded, tapering extremity, with a steep, concave slope descending from the dorsal margin. Inner duplicatures broad with pore canals evident. Shortest claw of anterior thoracic leg equal to one-half the length of the longer claw. Furca symmetrical with end claws short. Length 1.22 mm.; height 0.60 mm.

MALE: Unknown.

*Remarks.*—This species seems to most closely resemble *M. turbida* G. W. Müller, as far as shell shape is concerned, but is higher and has a greater concavity in the ventral border. The furcae also differ from those of *M. turbida.*

*Occurrence.*—Eight females were taken from debris of cracked-up rock from west side of Loggerhead Key, June 26, 1931 (no station number). Holotype (slide), U.S.N.M. no. 88847.

### Family NESIDEIDAE

### Genus Nesidea Costa

Short, high forms with strongly arched dorsal border. The dorsal border forms a more or less prominent angle with the anterior border. From the angle the anterior border slopes posteroventrally. Posterior border with a prominent angle at the ventral corner. Ventral border almost straight in the middle with upward sloping extremities. Posterior margin of the anterior thoracic legs with two bristles. Furca with at least five long bristles.

#### Nesidea cushmani, n. sp.

Figs. 4–8

*Specific characters.*—FEMALE: Shell typical for the genus with highly arched dorsal border. Height three-fifths the length; highest point in the middle from which the dorsal margin slopes ventralward anteriorly and posteriorly. Anterior end with an upturned corner about midway. From the corner the anterior border slopes backward to the ventral margin. Posterior extremity produced ventrally in a pronounced corner with concave upward-sloping extremity. Surface of shell covered with a profusion of long, heavy hairs. Eye well developed. Appendages typical for the genus. Furca with the shorter claw about one-half the length of the longer. On the posterior border of the furca are two short and two much longer bristles. A fifth bristle is located at the base of the longer claw.

MALE: Unknown.

*Occurrence.*—One female was obtained from rock fragments brought up with aid of diving hood west side of Loggerhead Key in 12–15 feet of water, July 24, 1930 (Station 30-30); two females from debris of broken-up clump of *Porites* also brought up from west side of Loggerhead Key with aid of diving hood, from probably the same depth as the preceding, July 26, 1930 (station, 33-30); two females from haul of 30-foot otter trawl in 10–11 fathoms in channel east and south of Loggerhead Key, August 8, 1930 (station 47-30); one female from haul of 30-foot otter trawl in 10–11 fathoms, lower channel east and south of Loggerhead Key, August 9, 1930 (station 48-30); one female from the debris of cracked-up rock from west side of Loggerhead Key, June 26, 1931 (no station number), holotype (slide), U.S.N.M. no. 88843.

### Family CYTHERIDAE

### Subfamily XESTOLEBERINAE

### Genus Xestoleberis Sars

Shell tumid, narrowed in front, with the ventral face distinctly flattened behind. Valves slightly unequal with a smooth and polished surface. Eyes distinctly separated and well developed. Behind the eyes is a kidney-shaped spot. Antennae rather short, the anterior ones with the terminal part 4-articulate. Posterior antennae without any evident suture of the penultimate joint, the two apical claws stout. Legs rather short and stout. Caudal lamellae with two short bristles on the tip.

#### Xestoleberis punctata, n. sp.

Fig. 12

*Specific characters.*—FEMALE: Shell, seen laterally, subtriangular in shape with greatest height slightly behind the middle and approaching seven-elevenths of the length. Dorsal border strongly arched and rounded; ventral border flattened with a slight concavity in anterior half. Both extremities broadly rounded, the posterior more so than the anterior. Prominent pore canals on anterior, ventral, and posterior borders. Pore canals are not bifurcate at the ends. Two distinct eyes with the characteristic kidney-shaped spot behind them. Teeth on hinge promi-

nent. Surface smooth without hairs but covered with a series of large, porelike spots. Internal structure typical of the genus with no exceptional structures. Length 0.54 mm.; height 0.35 mm.; width 0.28 mm.

Male: Unknown.

*Occurrence.*—One female from the debris of cracked-up rock from the west side of Loggerhead Key, June 26, 1931 (no station number). Holotype (slide), U. S. N. M. no. 88847.

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# PROCEEDINGS OF THE ACADEMY

### 429th Meeting of Board of Managers

The 429th meeting of the Board of Managers, held in the Cosmos Club, June 13, 1949, was called to order at 8:15 p.m. by the President, F. H. H. Roberts, Jr. Present were: F. B. Silsbee, H. S. Rappleye, N. R. Smith, W. W. Diehl, F. M. Defandorf, W. F. Foshag, C. L. Gazin, F. E. Johnston, F. A. Weiss, S. A. Dayton, R. S. Dill, Margaret Pittman, and F. M. Setzler.

The minutes of the 428th meeting were read and approved.

The President announced that Dr. C. J. Connolly had been appointed on the Committee on Grants-in-Aid for Research, to fill the vacancy caused by the death of Dr. John M. Cooper.

The President read a motion approved by the Executive Committee at its meeting held on June 13, 1949, and recommended it to the Board of Managers. The Board approved the recommendation submitted by the Executive Committee, namely, to instruct the Custodian and Subscription Manager to sign the necessary agreement for storage with Waverly Press, Inc. In collaboration with the Treasurer, the Custodian and Subscription Manager is to work out a plan whereby a proper proportion of existing stock and a suitable average for each issue as it appears be forwarded to the Custodian and Subscription Manager for storage; at the end of each calendar year the stock remaining with Waverly Press, Inc., to be shipped to Washington for storage.

The Secretary read a letter from J. E. Graf, Chairman of the Committee on Policy and Planning, transmitting a report of the Committee and suggesting that discussion of it be deferred until a later meeting of the Board when a full membership could be present. Mimeographed copies of the report were distributed to the members of the Board present, and the Secretary was instructed to send copies also to the members who were not present.

The Secretary announced the following deaths: Alfred P. Dachnowski-Stokes, botanist, formerly with the Department of Agriculture, on May 17, 1949 (elected November 3, 1926); John M. Cooper, anthropologist, Catholic University of America, on May 22, 1949 (elected February 26, 1940).

In the absence of the Custodian and Subscription Manager, it was announced that a complete set of the Journal had been sold to the Library of the Communicable Disease Center, in Georgia, a branch of the U. S. Public Health Service, for $326.

The President reported on the matter of the Science Calendar. He had conferred with James Fulton Fox, President of the D. C. Council of Engineering and Architectural Societies. After some discussion the Board voted that the Academy continue to cooperate with the D. C. Council of Engineering and Architectural Societies to carry on the Science Calendar and that